

LEADSCREW MECHANICAL DRIVE WITH
DIFFERENTIAL LEADSCREW FOLLOWER STRUCTURE

ABSTRACT OF THE DISCLOSURE

A leadscrew mechanical drive includes a leadscrew having a leadscrew axis and a leadscrew thread with a nonzero leadscrew thread pitch, and a leadscrew follower structure engaged to the leadscrew. The leadscrew follower structure includes a threaded insert having an insert thread with a nonzero insert thread pitch different from the leadscrew thread pitch, which is threadably engaged to the leadscrew. The leadscrew follower structure further includes a bearing in which the threaded insert is received and which permits the threaded insert to rotate about the insert axis, a bearing support in which the bearing is received, and a preload structure which biases the insert thread against the leadscrew thread.